The concept of Maps of Synchronization (MS) is proposed for visualizing and evaluating effect of collective behaviour of the support width DeltaAlpha of multi-fractal singularity spectrum of microseismic noise in a moving time window. The multi-fractal parameter DeltaAlpha was chosen because it gives a measure of different types of stochastic behaviour of noisy signals (for mono-fractal signals DeltaAlpha=0). Coherent variations of DeltaAlpha-values for a number of stations could be regarded as an important characteristic for extracting spatial domains and time intervals which are suspicious for preparing earthquakes or detecting indicator domains for earthquakes in other regions. The DeltaAlpha-values are computed for each day using vertical component seismic records with 1 Hz sampling rate (LHZ-records) from broadband stations. A preliminary transition from 1 Hz sampling rate to 1 minute sampling time interval by calculating mean values of records in adjacent 1-minute time intervals was performed before estimating singularity spectra. The MS-values are calculated within nodes of regular spatial grid as the multiple robust correlation coefficient for DeltaAlpha-variations from 5 nearest neighbour stations within moving time windows of the length 2 months. Thus, the MS give spatially distributed value within interval \([0,1]\) and the consequent MS-series presents the evolution of “Seismic Weather”. The results for global IRIS (1996-2010) broadband networks are presented.